



DARK ENERGY
SURVEY

The November 2009 CTIO-1m DECam 2k x 2k Observing Run

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Night Summary

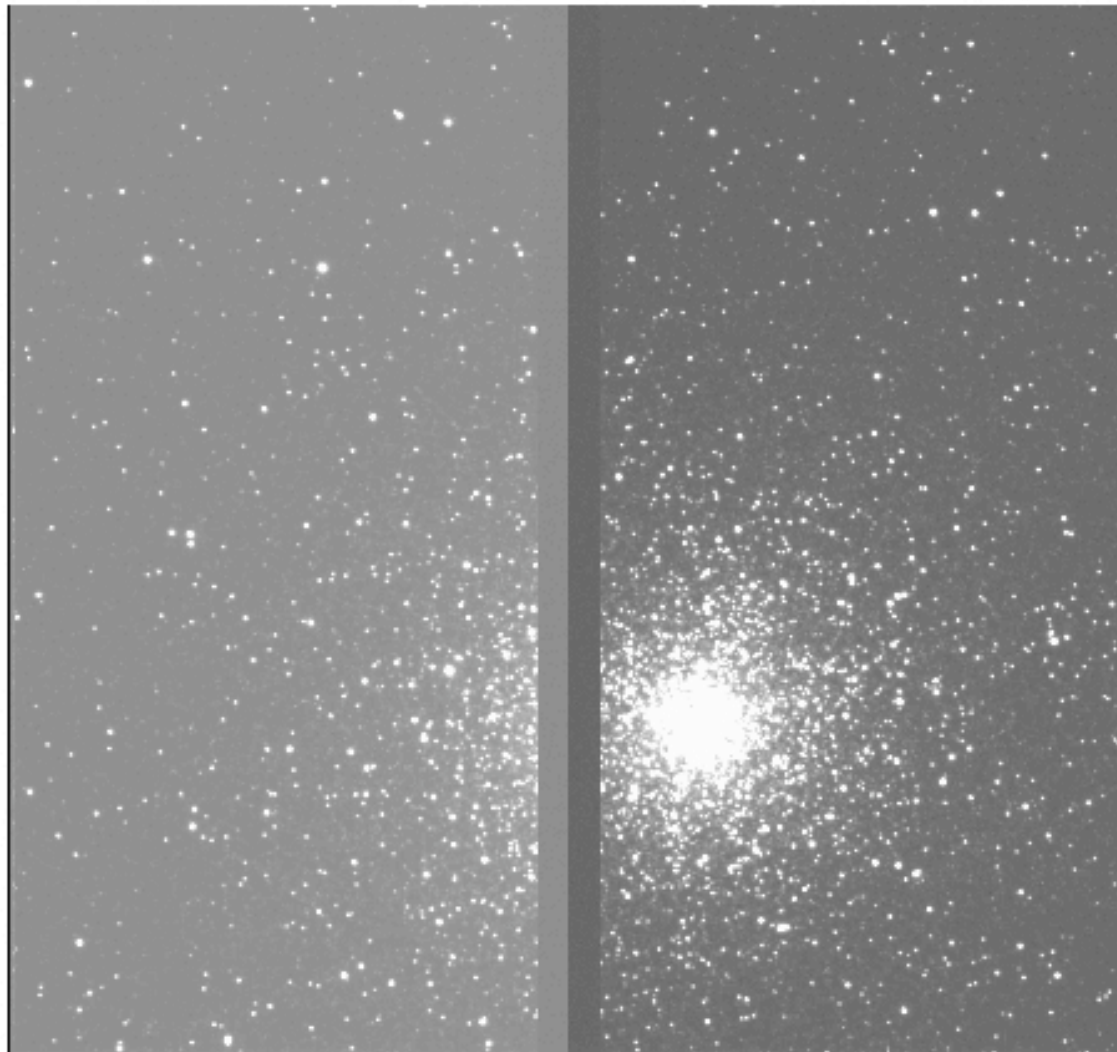
| Night | Date (UT) | Observers | Conditions | Observations/Tests |
|---------|-------------|-------------|------------|---|
| ----- | ----- | ----- | ----- | ----- |
| night 1 | 6 Nov 2008 | JE,TS,... | Clear | Engineering |
| night 2 | 7 Nov 2008 | JE,TS,... | M. Clear | Engineering |
| night 3 | 8 Nov 2008 | EB,DD,JP,DT | Clear | Std's, WD's, Stellar Linearity, PreCam, Astrom. |
| night 4 | 9 Nov 2008 | EB,JP,DT | Cirrus | Stellar Linearity, PreCam |
| night 5 | 10 Nov 2008 | EB,DB,WH,DT | Clouds | Jupiter, Cloud Structure (47 Tuc), PreCam |
| night 6 | 11 Nov 2008 | DB,WH,DT | Cirrus | Stellar Linearity, Grid Test, PreCam |
| night 7 | 12 Nov 2008 | DB,WH,DT | Clear | Std's, 47 Tuc, PreCam |

Data for nights 3-7 are on des06.fnal.gov:/data/des06.a/data/DES_CTIO1m_Runs/Nov2009/
Quick-and-dirty reductions for nights 3-7 are also available here.



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Raw Data



- NGC 104 (47 Tuc)
- Both amps in HDU 1
- Overscan in center of image (between amps)
- Gain ~ 1 e-/ADU
- Bias level $\sim 40,000$ counts



Minor FITS Header/Data Format Issues (for those interested in processing the data)

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We noticed some problems displaying the raw data with ds9.

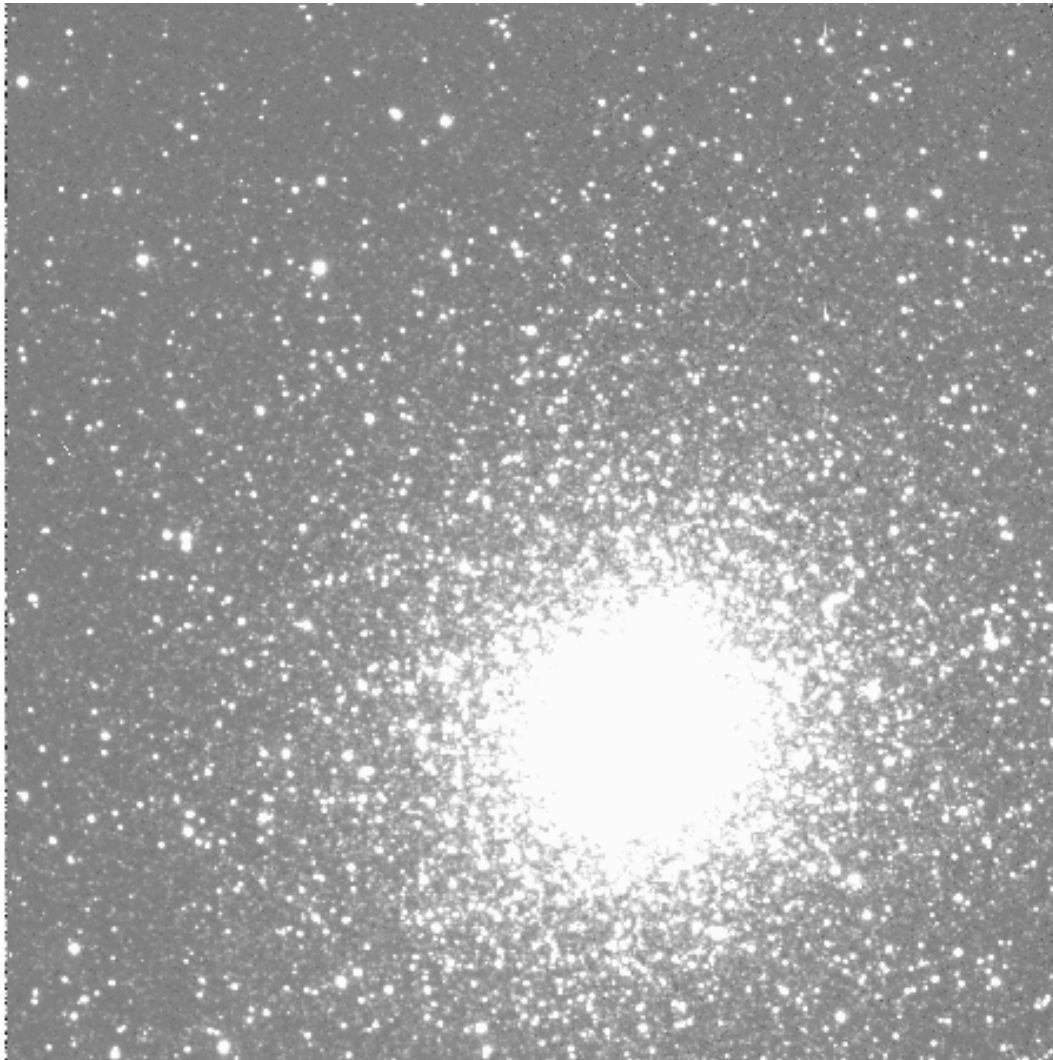
Here are some minor issues for the FITS headers (1-4) and the data format (5):

1. FITS keywords LTM1_2 and LTM2_1 should be removed
2. keyword RVAL1 should be renamed CRVAL1
3. DETSIZE should (maybe) be changed to [1:2184,1:2048]
4. for night 3, the values for CD1_2 and CD2_1 should be changed from 8.135E-07 to 8.135E-05.
5. The overscan regions for the two amps (probably) should be moved from the center of the image to the edges (this will also require adjusting the values for the TRIMSEC* and BIASSEC* keywords).



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Quick-and-Dirty processing

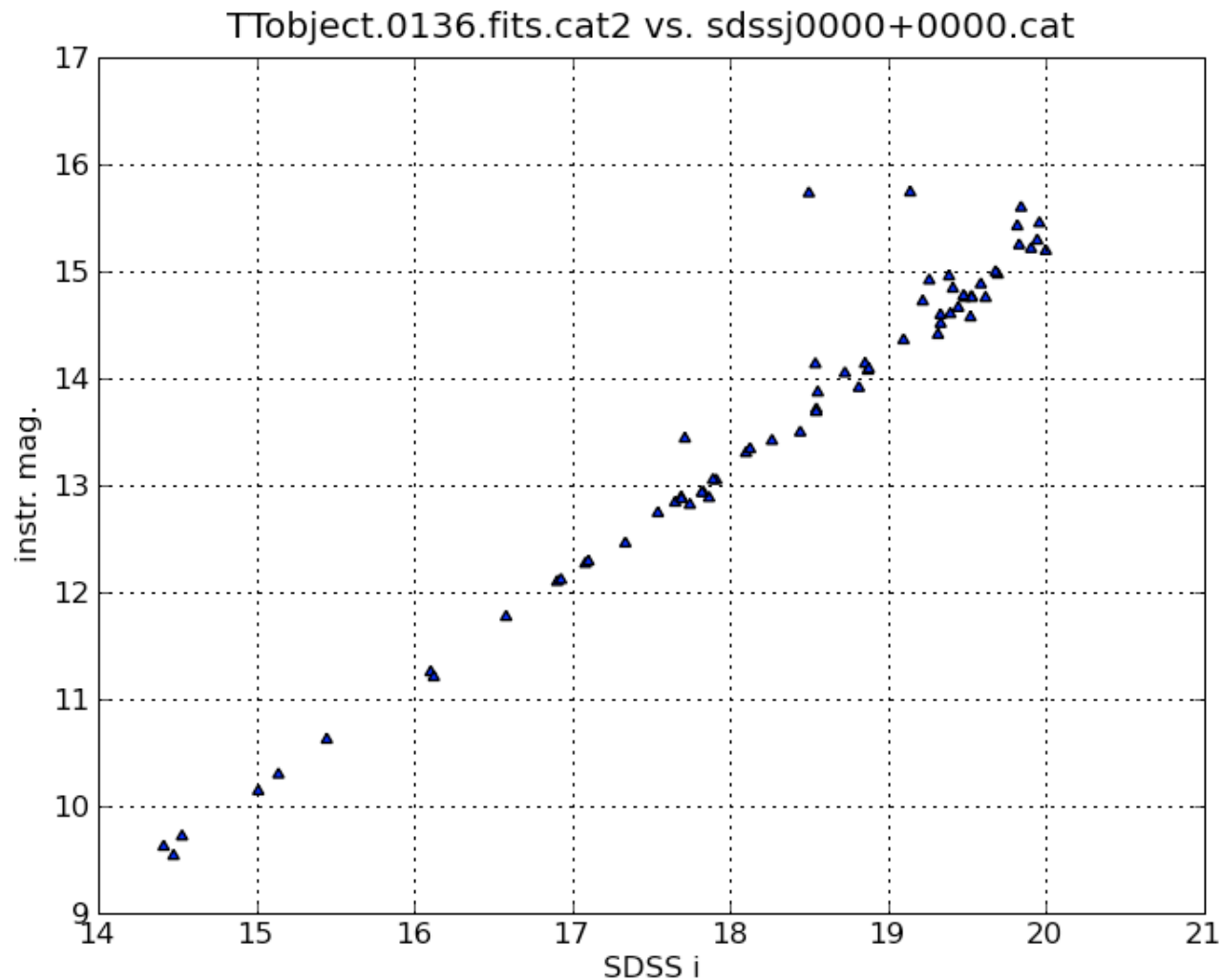


- Subtract overscan
 - Subtracted each amp's overscan from that amp – helped with matching the sky backgrounds between the two amps)
- Subtract bias frame
- Divide by (dome)
- Add WCS info into header (good orientation and pixel scale; approximate RA,DEC)
- Run SExtractor
- Not yet: adjust RA, DEC offset in WCS



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A Quick-and-Dirty Result: Stellar Linearity Test

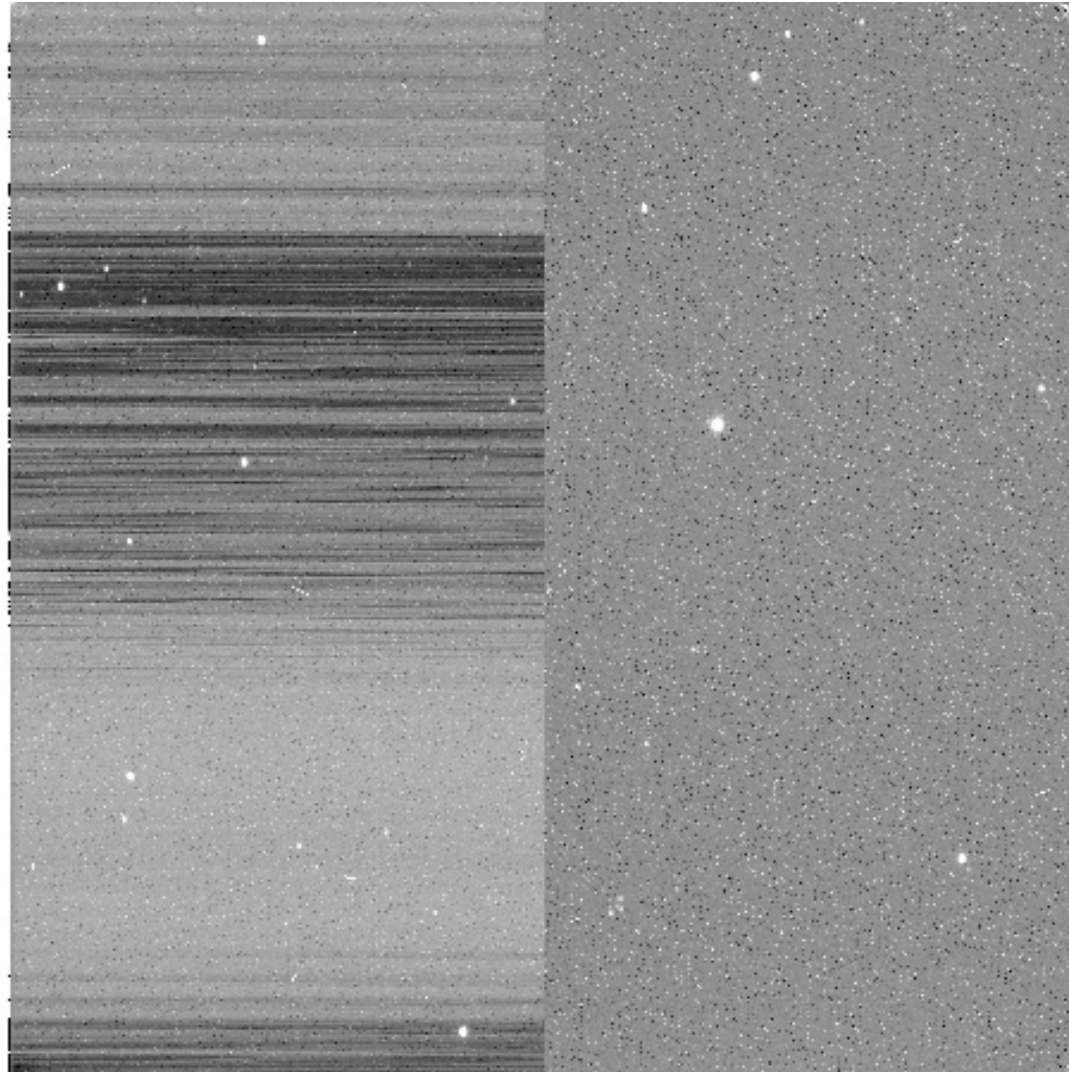


- Night 3 (Clear skies)
- Field in SDSS Stripe 82
- Compare with results from April 2008 and June 2009.



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Intermittent Noise in Left Amp





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Processing Notes: Night 3

Night 3

- General: flats are underexposed; use flats from n4 or later
- Individual frames:
- 137: fringing
- 138: horizontal stripes (both amps)
- 142: cosmic ray near $x=1024, y=937$ (straddling 2 amps)
- 145: cosmic ray near $x=1024, y=159$ (straddling 2 amps)
- 149: fringing
- 157-185: heavy horizontal stripes in left amp
- 162: long bleed trail associated with star in right amp
- 168: long bleed trail associated with 2 stars in right amp
- 174: satellite trail in right amp
- 186: heavy horizontal stripes in left amp have disappeared
- 191: heavy horizontal stripes in left amp have re-appeared
- 192: heavy horizontal stripes in left amp have disappeared
- 221: horizontal stripes in both amps



Processing Notes: Nights 4 & 5

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Night 4

- 104: bleed trails associated with 2 bright star in right amp (appears to be "braided")
- 107: fringing
- 109-142: horizontal stripes in left amp
- 109: satellite trail in right amp
- 143-147: no stars (completely clouded out)

Night 5

- 100-102: Jupiter (bright!)
- 103: NGC104, no evidence of persistence from Jupiter exposures
- 120: NGC104 has nearly disappeared (probably clouds)
- 120-125: variable/heavy cloudiness (probably)
- 216-217: slight horizontal striping in left amp
- 222-225: slight horizontal striping in left amp



Processing Notes: Nights 6 & 7

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Night 6

- 107-115: light horizontal striping in left amp
- 109: satellite trail straddling border between 2 amps
- 116-204: heavy horizontal stripes in left amp
- 205: heavy horizontal stripes in left amp have disappeared
- 212: cosmic ray @ $x=1024, y=677$ straddling 2 amps
- 218: horizontal stripes in left amp have re-appeared
- 218-224: horizontal stripes in left amp
- 225: horizontal stripes in left amp have disappeared

Night 7

- General: hardly any horizontal stripes at all
- 222: satellite trail straddling border between 2 amps
- 235: horizontal stripes in both amps
- 237: horizontal stripes in left amp
- 276: cosmic ray @ $x=1024, y=587$ straddling 2 amps